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AF Science Fair encourages youthful minds

by Tim Anderl, Materials and Manufacturing Directorate

WRIGHT PATTERSON AFB, Ohio – To fly was the oldest of dreams and baffled the most inventive minds, from Leonardo da Vinci to Thomas Edison. Two unlikely heroes, brothers from Dayton, Ohio, succeeded as no human beings ever had when they took off and landed in a flying machine of their own design.

The Wright brothers weren't however without mentors – experts in the field who advised them and guided their ideas. Their mentors pushed these self-taught aeronautical engineers to press their physical and intellectual bravery to the cutting edge.

In their spare time from the bicycle shop, the Wright Brothers read technical articles and books and were highly intrigued by the work of Octave Chanute.

When Wilbur began watching birds in flight, noticing how they banked and turned, he applied the principals to a box kite. He braced the wings with wires in a way that would allow the kite to bank and turn. It was natural then that he would approach a hero, Chanute, with this principal he called "wing warping."

Chanute was highly-respected in the aeronautical community in the United States and Europe and knew almost everyone who was engaged in aeronautical experimentation. When he received a letter from Wright, Chanute recognized that the Wright brothers were clearly well ahead of everyone else and something special.

At his invitation, the brothers reported on their experiments at the Western Society of Engineers. This public review of their work led the brothers to verify their ideas by use of a wind tunnel, which they built.

"The Air Force is proud of its lineage to revolutionary thinkers like the Wright brothers and Octave Chanute. We are mindful of our responsibility to continue this great legacy. By participating in the Air Force Science Fair Program we hope to carry over this tradition of mentoring to the brilliant innovators who have not yet been discovered," said Brig. Gen. Paul D. Nielsen, commander of the Air Force Research Laboratory.

In the tradition of Chanute, the Air Force has been participating in regional fairs for seven years and in international fairs since 1965. The program allows Air Force representatives to encourage students who are already conducting research in science, math and engineering and expose them to career possibilities in the science and engineering fields. The program also supports 350 regional fairs in the United States and Puerto Rico annually and presents more than 2,400 awards.

"Innovation and technology are key components of the Air Force's strong foundation. The imagination of the world's most inquiring minds—in government, in industry, in academia—are what provides the best equipment, weapon systems and ideas driving our organization," said Nielsen. "We never cease to be amazed by the foresight, drive and dedication each of the science fair participants possess. We know in our interactions with them that we could be talking to the next Orville and Wilbur Wright – that they could possess the insight to issue in a new age of science and engineering."

At the regional level, AFRL presents awards to the top two entries in both the junior and senior divisions. These fairs feature 1.5 million students competing at individual school and local levels for a chance to advance to the International Science and Engineering Fair held every May.

"Each year we look for judges, from within the Air Force Research Laboratory, to take the initiative of Chanute. We ask them to challenge and recognize the work of science fair participants by volunteering as a science fair judge," said Nielsen. "The encouragement provided helps to push these students to take their ideas out of the box and beyond the horizon – just like the Wright Brothers did."

Potential judges can find additional information about Air Force-supported science fairs on the Internet. The laboratory publishes a list of regional fairs on the AFRL web site at http://extra.afrl.af.mil/scifair/sci-fair.htm. Volunteers can check the list for fairs in their area, notify their appropriate point of contact and express interest in the program.

For the Annual International Science Fair, judges need an advanced degree in a scientific field, such

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as physics, mathematics, chemistry, or biology. Judges discuss the merits of particular projects with other judges who have some expertise in the area.

For more information on the Air Force Science Fair Program, contact Susan Sobieski at *Susan.Sobieski@afrl.af.mil*, or call her at (937)656-9875. **@**